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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,713	08/11/2005	Louis Fouarge	F-858 (31223.00075)	8448
25264	7590	10/12/2006	EXAMINER	
FINA TECHNOLOGY INC PO BOX 674412 HOUSTON, TX 77267-4412			CHEUNG, WILLIAM K	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/528,713

Applicant(s)

FOUARGE ET AL.

Examiner

William K. Cheung

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>081905</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 16-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 (line 8-14), the recitation "diverting the flow...by at least one of:" is considered indefinite because the item 2 and item 3 are not related to "diverting a flow" at all. Item 2 and item 3 are more related to impeding the flow, not diverting the flow.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 16-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Hopkins et al. (US 4,419,466).

*The invention of claims 16-35 relates to, in a **process for the polymerization of an alpha olefin in a slurry-type loop reactor** system comprising:*

*(a) **supplying at least one alpha olefin in a carrier liquid** to a reactor system comprising at least one loop reactor;*

*(b) **circulating said carrier liquid and monomer** through said loop reactor while polymerizing said monomer in the presence of a catalyst system in said carrier liquid to form a slurry of polymer fluff particles in said carrier liquid;*

*(c) **diverting the flow of said slurry through said loop reactor** by at least one of:*

*(1) **flowing a portion of said slurry through a bypass line** extending from one location of said loop reactor to another location of said loop reactor;*

*(2) **operating a circulating pump**, circulating said slurry through said reactor at an efficiency of within the range of 30-75% of said pump capacity; and*

*(3) **providing a plurality of obstacles in the flow path** of said slurry within said loop reactor; and*

*(d) while continuing the introduction of said diluent and monomer into said loop reactor, **withdrawing a portion of said slurry** from said reactor as a polymer product.*

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Hopkins et al. (col. 5, line 14-28) disclose an emulsion polymerization process involving a loop reactor. Since an emulsion is not a solution, it can also be considered as a slurry. Regarding the claimed alpha-olefin, Hopkins et al. (col. 1, line 34-35) clearly disclose a list of alpha-olefins suitable for the claimed process. Regarding the claimed "bypass" and "diverting" feature, Hopkins et al. (Figure) clearly disclose a loop reactor having a bypass capable of diverting a polymer slurry. Therefore, in view of the 112 rejection set forth in instant office action, Hopkins et al. has adequately taught all the features as claimed. Claims 16-35 are anticipated.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 16-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hopkins et al. (US 4,419,466).

Hopkins et al. (col. 5, line 14-28) disclose an emulsion polymerization process involving a loop reactor. Since an emulsion is not a solution, it can also be considered as a slurry. Regarding the claimed alpha-olefin, Hopkins et al. (col. 1, line 34-35) clearly disclose a list of alpha-olefins suitable for the claimed process. Regarding the claimed "bypass" and "diverting" feature, Hopkins et al. (Figure) clearly disclose a loop reactor having a bypass capable of diverting a polymer slurry.

If applicants argue that the monomers disclosed in Hopkins et al. are not alpha-olefins, applicants must recognize that Hopkins et al. (claim 1) generically claim monomers having a polymerizable double bond. Motivated by the expectation of success of developing the polymerization process of Hopkins where a loop reactor equipped with a bypass feature capable of diverting a flow (figure), it would have been obvious to one of ordinary skill in art to polymerize ethylene and propylene because they are the simplest monomers with a polymerizable double bond to obtain the invention of claims 16-35. In view of the 112 rejection set forth in instant office action, the 103 rejection is proper.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William K. Cheung, Ph. D.

Primary Examiner

**WILLIAM K. CHEUNG**  
**PRIMARY EXAMINER**

September 30, 2006